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GAU1621

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Re: Appeal to the Board of Patent Appeals and Interferences

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OCT 28 1999

TECH CENTER 1600/2900

In re PATENT Application of  
Berscheid, et. al.

Group Art Unit: 1621

Application No. 08/860,007

Examiner: Shippen

Filed: August 4, 1997

For: BIOCIDAL ALCOHOLS, THEIR PRODUCTION AND THEIR USE

Hon. Asst. Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

October 25, 1999

Sir:

- 1 ☐ **NOTICE OF APPEAL:** Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision (not Advisory Action) dated of the Examiner twice/finally rejecting claims
- 2 ☒ **BRIEF** on appeal in this application attached in triplicate.
- 3 ☐ An **ORAL HEARING** is respectfully requested under Rule 194 (due two months after Examiner's Answer -- unextendable).
- 4 ☐ Reply Brief is attached in triplicate (due two months after Examiner's Answer -- unextendable).
- 5 ☒ "Small entity" verified statement filed: ☐ herewith. ☒ previously.

<b>6 FEE CALCULATION:</b>		Large/Small Entity	
If box 1 above is X'd, see box 12 below <u>first</u> and decide: .....		enter \$	\$
If box 2 above is X'd, see box 12 below <u>first</u> and decide: .....		enter \$	\$150
If box 3 above is X'd, see box 12 below <u>first</u> and decide: .....		enter \$	\$
If box 4 above is X'd, .....		enter nothing	- 0 - (no fee)
<b>7. Original due date: August 30, 1999</b>			
8. Petition is hereby made to extend the original due date to cover (1 months) the date this response is filed for which the requisite fee is attached (2 months) (3 months) (4 months) (5 months)		\$190	\$190
9. Enter any previous extension fee paid [ ] previously since above <u>original</u> due date (item 7); [ ] with concurrently filed amendment .....		-	
10. Subtract line 9 from line 8 and enter: Total Extension Fee			\$340
11. TOTAL FEE ATTACHED =			\$340

12. ☐ \*Fee **NOT** required if/since paid in prior appeal in which the Board of Patent Appeals and Interferences did not render a decision on the merits.

**CHARGE STATEMENT:** The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. 50-0687, order No. 62-651 for which purpose a duplicate copy of this sheet is attached. This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT Application of  
Berscheid, et. al.

Application Serial No. 08/860,007

Filed: August 4, 1997

For: BIOCIDAL ALCOHOLS, THEIR PRODUCTION AND THEIR USE

\* \* \* \* \*

October 25, 1999

APPEAL BRIEF

Hon. Asst. Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

This is an appeal from the final rejection of claims 8, 13, 14, 16-18, 21-26 and  
33-35 of the subject application.

This Appeal Brief is submitted in triplicate as required by 37 C.F.R. § 1.192 (a).

1. Real Party in Interest:

This application is assigned to Dr. Ralf Berscheid.

2. Related Appeals and Interferences:

There are no other appeals or interferences known to Appellant, the Appellant's  
legal representative, or assignee which will directly affect or be directly affected by or  
have a bearing on the Board's decision in the pending appeal.

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02 FC:216 190.00 OP



Group Art Unit: 1621

Examiner: Shippen

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OCT 28 1999

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Expt 97 final (2)  
appeal Brief  
1073  
C. Smith  
11/1/99

3. Status of Claims:

Claims 8, 13, 14, 16-26 and 28-42 are pending in this application. Claims 19, 20, 28-32 and 36-42 stand withdrawn from consideration pursuant to a Restriction Requirement.

The rejection of claims 8, 13, 14, 16-18, 21-26 and 33-35 is appealed. Please see the Appendix for a copy of the claims under appeal as amended by the Amendment After Final Under Rule 116 filed on March 26, 1999 and the Amendment filed herewith of even date.

4. Status of any Amendment Filed Subsequent to Final Rejection:

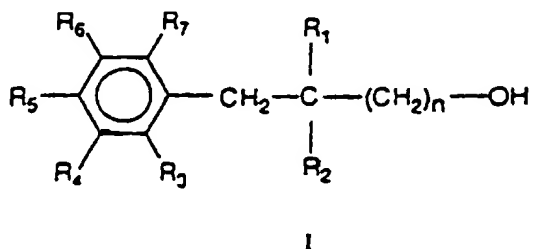
An Amendment Under Rule 116 dated March 26, 1999 was filed subsequent to the Examiner's final rejection of December 30, 1998. In the Advisory Action dated April 7, 1999, the Examiner stated that the Amendment did not place the application in condition for allowance, thus necessitating this Appeal. The Examiner stated that the Amendment would be entered upon the filing of this Appeal.

A Notice of Appeal was filed on June 30, 1999, along with the appropriate petition for three month's extension and fee.

An Amendment After Final Under Rule 116 has been filed herewith of even date to reduce the issues for appeal.

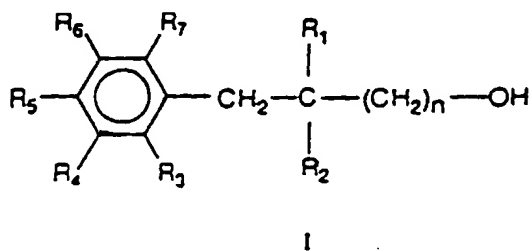
5. Concise Explanation of the Invention:

Independent claim 13 provides a compound according to formula I,



wherein  $R_1$ ,  $R_3$ ,  $R_5$ ,  $R_6$ , and  $R_7$  are hydrogen;  $R_2$  is an ethyl group;  $R_4$  is chlorine; and  $n$  is 1 or 2. Basis for this claim can be found in the present specification including at page 13, lines 5-6 and original claim 5.

Independent claim 14 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative comprising a compound selected from alcohols, surfactants and solvents; and at least one compound according to formula I:



wherein,

$R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;

$R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and  
each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2,

with the proviso, that

i) when  $R_1$  and all groups  $R_3$  through  $R_7$  are hydrogen, then

$$n = 2;$$

ii) when  $R_1$  and  $R_2$  are  $C_1$ - $C_6$  alkyl and

a) all groups  $R_3$  to  $R_7$  are hydrogen, or

b)  $R_5$  is methyl, methoxy or chloride, and all other groups  $R_3$ ,

$R_4$ ,  $R_6$  and  $R_7$  are hydrogen,

then  $n = 2$ ;

iii) when  $R_1$ ,  $R_2$  and  $R_4$  are methyl and all groups  $R_3$  and  $R_5$  through  $R_7$  are hydrogen, then  $n = 2$ ;

iv) when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ ;

v) when  $R_1$ ,  $R_3$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_2$  is methyl, and  $R_4$  and/or  $R_5$  are hydrogen or  $C_1$ - $C_6$  alkyl, then  $n = 2$ ;

vi) when  $R_1$  and  $R_4$  through  $R_7$  are hydrogen,  $R_2$  is methyl or ethyl, and  $R_3$  is methyl or methoxy, then  $n = 2$ ;

vii) when  $R_1$ ,  $R_3$ ,  $R_5$  and  $R_7$  are hydrogen,  $R_2$  is methyl,  $R_4$  and  $R_6$  are methyl or  $R_4$  is hydrogen and  $R_6$  is methyl, then  $n = 2$ ; and

viii) when  $R_1$  is hydrogen,  $R_2$  is butyl,  $R_3$  and  $R_5$  are chloride, and all other groups  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen, then  $n = 2$ .

Dependent claim 8 recites a composition according to claim 14 which contains

(a) 0.01 to 10% by wt. of a compound of formula I, and

(b) 0.1 to 90% by wt. of a compound selected from  $C_1$ - $C_6$  alkyl alcohols, unsubstituted or substituted with a  $C_6$ - $C_{12}$  aryl, aralkyl or aryloxy group, anionic cationic, amphoteric or nonionic surfactants, dimethylformamide, betaines and glycerine.

Basis for this claim can be found in the present specification including at page 1, first paragraph and page 3, line 5 to page 4, line 13.

Dependent claims 16-18 recite compositions according to claim 14, wherein said compound according to formula I is present in an amount of about 0.01 to about 10% by weight (claim 16), about 0.05 to about 8% by weight (claim 17), or about 0.1 to about 5% by weight (claim 18). Basis for these claims can be found in the present specification including at page 6, lines 5-6.

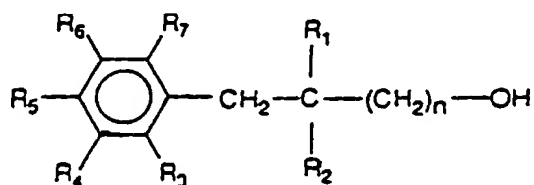
Dependent claim 33 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_3$  and  $R_5$  to  $R_7$  are hydrogen,  $R_4$  is chlorine,  $R_1$  is hydrogen,  $R_2$  is ethyl and  $n$  is 1. Basis for this claim can be found in the present specification including at compound No. 6 on page 14 of the specification.

Dependent claim 34 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_4$  to  $R_7$  are hydrogen,  $R_3$  is chlorine,  $R_1$  is

hydrogen,  $R_2$  is ethyl and  $n$  is 1. Basis for this claim can be found in the present specification including at compound No. 9 on page 14 of the specification.

Dependent claim 35 recites a disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_5$  is chlorine,  $R_1$  is hydrogen,  $R_2$  is ethyl and  $n$  is 1. Basis for this claim can be found in the present specification including at compound No. 10 on page 15 of the specification.

Independent claim 21 provides a shampoo or shower gel containing a preservative comprising a compound selected from alcohols, surfactants and solvents; a re-fatting agent; and a compound according to formula I:



I

wherein,

$R_1$  is hydrogen or is selected from  $\text{C}_1\text{-C}_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $\text{C}_2\text{-C}_8$  alkenyl and  $\text{C}_3\text{-C}_8$  alkynyl;

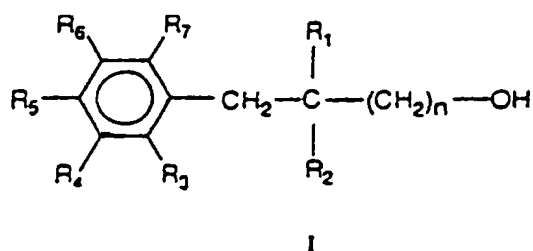
$R_2$  is selected from  $\text{C}_1\text{-C}_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $\text{C}_2\text{-C}_8$  alkenyl and  $\text{C}_3\text{-C}_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $\text{C}_1\text{-C}_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $\text{C}_2\text{-C}_8$  alkenyl and  $\text{C}_3\text{-C}_8$  alkynyl, optionally attached to the

aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, page 24, line 26 and page 25, lines 31-32.

Independent claim 22 recites a method of disinfecting a surface comprising the step of applying a disinfectant to said surface, said disinfectant comprising a compound selected from alcohols, surfactants and solvents; and a compound according to formula I:



wherein,

$R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;

$R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the

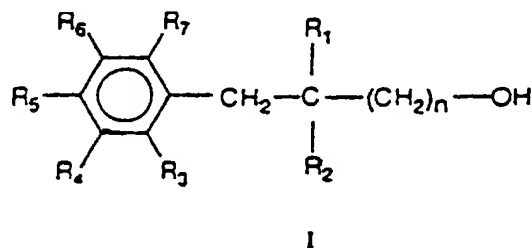


aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, and pages 26-30.

Dependent claim 23 recites a method according to claim 22, wherein said surface is skin, a mucous membrane, or a surgical glove. Basis for this claim can be found in the present specification including at pages 26-30 and original claim 12.

Dependent claim 24 recites a method of deodorizing a surface comprising the step of applying a disinfectant to said surface, said deodorant comprising a compound selected from alcohols, surfactants and solvents; and a compound according to formula I:



wherein,

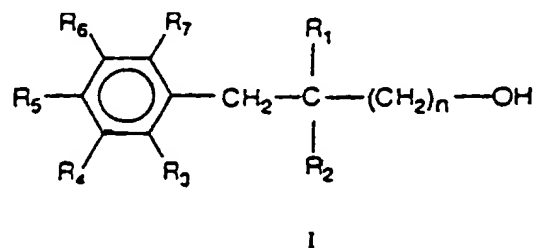
- $R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;
- $R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .

Basis for this claim can be found in the present specification including at pages 23 and 24 and original claim 12.

Dependent claim 25 recites a method according to claim 24, wherein said surface is skin. Basis for this claim can be found in the present specification including at pages 23 and 24 and original claim 12.

Independent claim 26 provides a process for the production of a compound of formula I:



wherein,

$R_1$  is hydrogen;

$R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2;

with the proviso, that

i) when all groups  $R_3$  through  $R_7$  are hydrogen, then

$$n = 2;$$

ii) when all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl,

isopropyl, tert-butyl, or methoxy, then  $n = 2$ ;

iii) when  $R_3$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_2$  is methyl, and  $R_4$  and/or  $R_5$  are

hydrogen or  $C_1$ - $C_6$  alkyl, then  $n = 2$ ;

iv) when  $R_4$  through  $R_7$  are hydrogen,  $R_2$  is methyl or ethyl, and  $R_3$  is

methyl or methoxy, then  $n = 2$ ;

v) when  $R_3$ ,  $R_5$  and  $R_7$  are hydrogen,  $R_2$  is methyl,  $R_4$  and  $R_6$  are methyl

or  $R_4$  is hydrogen and  $R_6$  is methyl, then  $n = 2$ ; and

vi) when  $R_2$  is butyl,  $R_3$  and  $R_5$  are chloride, and all other groups

$R_4$ ,  $R_6$  and  $R_7$  are hydrogen, then  $n = 2$ ;

said process comprising the steps of:

a) monoalkylating a malonic acid dialkyl ester to introduce the group  $R_2$ ;

b) dialkylating the monoalkylated malonic acid alkyl ester with a benzyl halide optionally substituted at the aromatic ring to introduce the groups  $R_3$  through  $R_7$  which are other than hydrogen;

- c) saponifying and decarboxylating the dialkylated malonic acid dialkyl ester to form a corresponding 3-aryl-substituted propionic acid, and
- d) reducing the 3-aryl-substituted propionic acid to form a desired alcohol of formula I.

Basis for this claim can be found in the present specification including at page 1, first paragraph, page 3, line 5 to page 4, line 13, and page 9, lines 9-25.

6. Issues

- I. Whether claim 26 complies with 35 U.S.C. § 112, first and second paragraphs.
- II. Whether claims 8, 14, 16-18 and 21-25 are patentable under 35 U.S.C. § 103 over U.S. Patent No. 4,110,430 (Hopp).
- III. Whether claims 8, 13, 14, 16-18, 21-25 and 33-35 are patentable under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos).
- IV. Whether claim 26 is patentable under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry").

7. Grouping of Claims:

With regard to the obviousness rejection based on Hopp, claims 8, 14, 16-18 and 21-25 stand or fall together.

With regard to the obviousness rejection based on Sipos, claims 8, 14, 16-18 and 21-25 stand or fall together. Each of claims 13 and 33-35 do not stand or fall with any other claim.

Claim 26 does not stand or fall with any other claim.

8. Arguments

I. **Claim 26 complies with 35 U.S.C. § 112, first and second paragraphs.**

In the final Office Action, the Examiner rejected claim 26 under 35 U.S.C. § 112, first and second paragraphs. The Examiner argues that the process steps will not afford products where  $R_1$  is not hydrogen or products wherein  $n$  is 2. The Appellant respectfully submits that the present specification fully enables one skilled in the art to practice the method as recited in claim 26.

Claim 26 requires that  $R_1$  be hydrogen and thus the part of the Section 112 rejection regarding  $R_1$  can only be directed to claim 15, now canceled.

In response to the part of the Section 112 rejection regarding  $n = 2$ , the Appellant submits that page 9, lines 9-25 of the present specification clearly demonstrates how to formulate compounds in which  $n$  is 2 using the method recited in claim 26. As can be seen from the specification, the compounds in which  $n$  is 2 can easily be formed by using a different starting material than the starting material for forming compounds in which  $n$  is 1. Thus, the method steps recited in claim 26 can form compounds in which  $n$  is 1 or 2 depending on the starting material.

For these reasons, the Appellant respectfully submits that claim 26 fully complies with Section 112. Accordingly, withdrawal of the Section 112 rejection is respectfully requested.

**The Prior Art Rejections Should be Withdrawn for Non-compliance with MPEP § 706.04.**

MPEP § 706.04 provides that great care should be exercised in authorizing a rejection of a previously allowed claim. Full faith and credit should be given to the search and action of the previous Examiner unless there is a clear error in the previous action or knowledge of other prior art. In general, an examiner should not take an entirely new approach or attempt to reorient the point of view of a previous Examiner, or make a new search in the mere hope of finding something.

In paragraph 14, on page 7 of the first Office Action dated October 3, 1997, Examiner Puttlitz stated that the subject matter of claims 9 and 10 was allowable. Original claim 5 was not rejected over prior. Present independent claim 13 recites the subject matter of original claim 5. Present independent claim 14 recites the subject matter of allowed claim 9. Present claim 15 recites the subject matter of allowed claim 10. All of the independent claims of record include a compound which was held to be patentable over the prior art by original Examiner Puttlitz.

New Examiner Shippen has improperly withdrawn the allowability of claims 9 and 10 and rejected the subject matter of allowed claims 9 and 10 and claim 5 under the guise of newly found prior art. However, the alleged newly found prior art is farther removed from the claimed invention than the references cited by the original Examiner Puttlitz.

Examiner Shippen admits that the new prior art does **not** disclose the claimed compounds. Examiner Shippen relies on the very rarely used doctrine of "structural similarity" to reject the claimed invention over the newly cited references.

Examiner Shippen improperly conducted a new search and has improperly taken an entirely new approach to reorient the point of view of previous Examiner Puttlitz. As discussed more fully below, new Examiner Shippen improperly stretches the teachings in the alleged new prior art and relies on the very weak doctrine of "structural similarity". The new search and new approach do not comply with the requirements of MPEP §

706.04, and therefore the prior art rejections of record should be withdrawn for this reason alone.

**II. Claims 8, 14, 16-18 and 21-25 are patentable under 35 U.S.C. § 103 over U.S. Patent No. 4,110,430 (Hopp).**

In the final Office Action, the Examiner rejected claims 8, 14, 16-18 and 21-25 under 35 U.S.C. § 103 over Hopp. The Appellant respectfully submits that the Examiner has not provided a prima facie case of obviousness and even if a prima facie case has been provided, the claimed invention is not obvious from Hopp for the following reasons.

The Examiner argues that the claims recite isomers or homologs of the compounds disclosed in Hopp and differ only by the placement of the alkyl on the benzene ring. By use of the term "isomers" it is believed that the Examiner is referring to "position isomers" which are defined by MPEP 2144.09 as "compounds having the same radicals in physically different positions on the same nucleus." Homologs are defined by MPEP 2144.09 as "compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH<sub>2</sub>- groups."

Hopp does **not** disclose the use of alkyls substituted on the benzene ring, but rather only the use of **isopropyl** or **tert-butyl**. See column 1, line 39 of Hopp. Thus, the only compounds recited in the claims of the subject application that can be a "position isomer" of the compounds disclosed in Hopp are those in which only one of R<sub>3</sub>, R<sub>4</sub>, R<sub>6</sub> and R<sub>7</sub> is isopropyl or tert-butyl, the remaining groups R<sub>3</sub> through R<sub>7</sub> and R<sub>1</sub> are hydrogen, R<sub>2</sub> is methyl, and n is 1. Furthermore, the only compounds recited in the claims of the subject application which can be a "homolog" of the compounds disclosed in Hopp are those in which R<sub>5</sub> is isopropyl or tert-butyl, all of R<sub>3</sub>, R<sub>4</sub>, R<sub>6</sub> and R<sub>7</sub> are hydrogen, R<sub>2</sub> is methyl, and n is 2. All other compounds recited in the claimed invention cannot be a position isomer or homolog of the compounds disclosed in Hopp.

Homology and isomerism are **not** substitutes for a prima facie case of obviousness and they are only a relevant fact in the determination of obviousness. Even if the Examiner has provided a prima facie case, the experimental evidence of record rebuts any such prima facie case of obviousness. Claims 8, 14, 16-18 and 21-25 recite novel compounds and compositions which are not disclosed in Hopp. The experimental evidence disclosed in the present specification demonstrates the unexpected advantages of the claimed compounds compared to those disclosed in Hopp. Hopp only discloses that their compounds have a microbicide effect on *Staphylococcus epidermis* and *aureus*, and *Candida albicans*. In contrast, the claimed compounds and compositions exhibit an unexpected microbicide effect against *Escherichia coli* (Tables on pages 19, 21, 25, and 27), as well as an unexpected anti-fungal properties (Tables on pages 23 and 24). Hopp does not teach or suggest that the claimed compounds have anti-fungal properties or microbicide properties against *e. coli* and therefore cannot make obvious the compounds and compositions recited in claims 8, 14, 16-18 and 21-25.

The Appellant respectfully submits that the Examiner's allegations that one of ordinary skill in the art would be motivated to make the claimed compounds is based on unfounded assumptions. The Examiner's reliance on *In re Shetty*, 195 USPQ 753; *In re Lintner*, 173 USPQ 560; and *In re Hoch*, 166 USPQ 406, to support a prima facie case of obviousness and to find obviousness is without merit for the following reasons.

*Shetty* stated that homologs may give rise to a prima facie case of obviousness since the Appellants did not provide counter arguments. *Shetty*, p 756, held that since the Appellants did not provide any experimental evidence showing actual differences in properties the homologs were obvious, relying on *Hoch*. In contrast to the facts in *Shetty*, the Appellants have demonstrated that the properties of the claimed compounds are actually different than those of Hopp, as discussed above.

*Lintner* relates to a laundry composition in which the invention differed from the prior art composition by the reason for the addition of sugar. The prior art disclosed



the use of sugar. The court found the presence of sugar for a different reason was not patentable. The court in *Lintner*, at p. 562, stated that:

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification."

The Examiner has not demonstrated how the references teach or provide a suggestion to one of ordinary skill in the art to modify the compounds of Hopp to arrive at the claimed compounds, nor the claimed compositions containing the compounds. Unlike the facts in *Lintner*, the presently claimed compounds and compositions are not disclosed in Hopp, whereas the sugar in *Lintner* was disclosed in the prior art references. Thus, the Examiner's finding of obviousness based on *Lintner* is without merit and should be withdrawn.

*Hoch*, p. 409, held that a prima facie case was not overcome because the Appellants did not show how the reference compounds and claimed compounds actually differ in properties. In contrast, in the present Appeal the Appellant has demonstrated that the properties of the claimed compounds and compositions are actually different than those of Hopp, as discussed above. Thus, *Hoch* does not support the Examiner's conclusion that the claimed invention is obvious over Hopp.

For all of the reasons advanced above, the Appellants submit that the claimed invention is not obvious over Hopp and therefore withdrawal of the Section 103 rejection is respectfully requested.

**III. Claims 8, 13, 14, 16-18, 21-25 and 33-35 are patentable under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos).**

In the final Office Action, the Examiner rejected claims 8, 13, 14, 16-18, 21-25 and 33-35 under 35 U.S.C. § 103 over U.S. Patent 4,321,257 (Sipos). The claimed invention is not taught or suggested by Sipos for the following reasons.

The Examiner admits that Sipos does not disclose the claimed compounds. However, the Examiner argues that the group III phenol alkanols disclosed in Sipos generically teach the claimed compounds.

The Appellant submits that Sipos teaches that the large list of group III phenol alkanols cited by the Examiner are only "potentiators" (column 4, lines 23 and 55). Potentiators are taught as enhancing the activity of an antimicrobial agent, not that the potentiator is an antimicrobial agent (column 3, lines 15-18).

In contrast, the presently claimed compounds are antimicrobial agents, disinfectants, deodorants, antimycotics or preservatives, not merely potentiators, as demonstrated by the experimental results disclosed in the Examples of the present specification. Sipos does not teach or suggest that any species in the group III phenol alkanols would have antimicrobial, disinfectant, deodorant, antimycotic or preservative properties and therefore cannot make obvious use of these compounds as an antimicrobial agent, disinfectant, deodorant, antimycotic or preservative.

The Appellant respectfully submits that Examiner's allegations that one of ordinary skill in the art would be motivated to make the claimed compounds from reading Sipos is based on unfounded assumptions. The Examiner again improperly relies on *In re Shetty*, 195 USPQ 753; *In re Lintner*, 173 USPQ 560; and *In re Hoch*, 166 USPQ 406, to support a prima facie case of obviousness and to find obviousness.

*Shetty* stated that homologs may give rise to a prima facie case of obviousness since the Appellants did not provide counter arguments. *Shetty*, p 756, held that since the Appellants did not provide any experimental evidence showing actual differences in properties the homologs were obvious, relying on *Hoch*. In contrast to the facts in *Shetty*, the present Appellant has demonstrated that the properties of the claimed compounds and compositions containing the compounds are actually different than the compounds of Sipos, as discussed above. Sipos does not disclose any properties of compounds which are purported to be similar to the claimed compounds.

Furthermore, the claimed compounds are not isomers or homologs of the compounds

disclosed in Sipos and therefore *Shetty* does not support the Examiner's conclusion that a prima facie case of obviousness has been presented.

*Lintner* relates to a laundry composition in which the invention differed from the prior art references by the reason for the addition of sugar. The prior art disclosed the use of sugar. The court found the presence of sugar for a different reason was not patentable. The court in *Lintner*, at p. 562, stated that:

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification."

The Examiner has not demonstrated how the references teach or suggest to one of ordinary skill in the art to modify the compounds of Sipos to arrive at the claimed compounds, nor the specifically claimed compositions containing these compounds. Unlike the facts in *Lintner*, the claimed compounds and compositions are not disclosed in Sipos, whereas the sugar in *Lintner* was disclosed in the prior art references. Thus, Examiner's finding of obviousness based on *Lintner* is without merit and should be withdrawn.

*Hoch*, p. 409, held that a prima facie case was not overcome because the Appellant did not show how the reference compounds and claimed compounds actually differ in properties. In contrast, the present Appellant has demonstrated that the properties of the claimed compounds and compositions are actually different than those of Sipos, as discussed above. Thus, *Hoch* does not support the Examiner's conclusion that the claimed invention is obvious over Sipos.

For all of the reasons advanced above, the Appellant submits that the claimed invention is not obvious over Sipos and therefore withdrawal of the Section 103 rejection is respectfully requested.

**IV. Claim 26 is patentable under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry."**

In the final Office Action, the Examiner rejected claim 26 is patentable under 35 U.S.C. § 103 over U.S. Patent 4,968,668 (Hafner) in view of Vogel, "A Textbook of Practical Organic Chemistry." The Appellant submits that claims 26 is not taught or suggested by the theoretical combination of Hafner and Vogel for the following reasons.

The Examiner admits that Hafner does not teach the claimed step (a) and that some of the reactants differ as to the substituents present. The Examiner argues that Vogel teaches the claimed step (a).

There is no motivation in either of the cited references to follow the claimed step (a) to form the specific monoalkylated malonic acid alkyl esters claimed and then follow the claimed steps (b) through (d) to form the specific alcohols presently claimed. The Appellant respectfully submits that the Examiner is unfairly relying on hindsight gleaned from the present specification and is improperly using the present specification as a blueprint to piece unrelated teachings from the references together.

The Examiner admits that Hafner uses different reactants and thus forms different products than those presently claimed. The Examiner merely argues that the use of a new starting material in an otherwise old process is considered obvious and improperly cites cases as the only basis for the rejection. The Appellant directs the Board's attention to *In re Ochiai*, 37 USPQ2d 1127, 1132 (Fed. Cir. 1995), in which the Federal Circuit stated that:

"Mere citation of *Durden*, *Albertson* or any other case as a basis for rejecting process claims that differ from the prior art by their use of different starting materials is improper, as it sidesteps the fact-intensive inquiry mandated by Section 103."

The Examiner has provided no motivation or teaching in any of the cited references which would direct one of ordinary skill in the art to ignore the teachings in

Hafner and use different reactants (as presently claimed) and then change the process of Hafner and use part of the method disclosed in Vogel.

The Examiner improperly relies on *In re McLaughlin*, 170 USPQ 209 to support a prima facie case of obviousness. *McLaughlin* relates to a mechanical invention in which a reference teaching boxcars is combined with a reference teaching a side filler panel. The Examiner is relying on the statement "any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning" to support his prima facie case. However, the Examiner must still demonstrate that some teaching in the prior art provides the motivation to combine the teachings. The Federal Circuit stated in *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988) that:

"When prior art references require selective combination . . . to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself . . . Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination."

The Appellant submits that the Examiner has not provided any teaching or suggestion in the prior art which provides any motivation to selectively combine Hafner and Vogel. For these reasons, the Appellant respectfully submits that the Examiner has not provided sufficient evidence to support a prima facie case of obviousness and the Section 103 rejection should be withdrawn for this reason alone.

Even if the references were combined, the theoretical combination of Hafner and Vogel would not make obvious the method recited in claim 26. The theoretical combination of Hafner and Vogel provides a method which makes a different alcohol

than those claimed because Hafner teaches the use of different reactants than those in the claimed method.

Furthermore, the claimed invention provides unexpected properties not disclosed in the cited references. As discussed above, the compounds formed by the claimed method exhibit antimicrobial, disinfectant, deodorant, antimycotic or preservative properties. Hafner only discloses that the alcohols disclosed therein provide fragrance properties. Vogel also does not teach or suggest a method of forming compounds that are suitable for use as antimicrobial, disinfectant, deodorant, antimycotic or preservative agents.

For these reasons, the claimed method is not taught or suggested by the theoretical combination of Hafner and Vogel. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

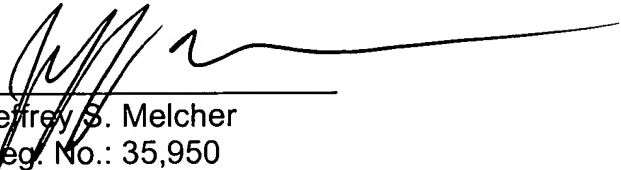
Conclusion

In view of the improper withdrawal of the allowance of the claimed invention under MPEP § 706.04, the lack of *prima facie* case of obviousness, the many differences between the claimed invention and the cited references, and the unexpected advantages of the claimed invention, it is believed that this application clearly and patentably distinguishes over the combination of the cited references and is in proper condition for allowance. Accordingly, Appellants respectfully request that the Board allow claims 8, 13, 14, 16-18, 21-26 and 33-35 over the cited references.

Respectfully submitted,

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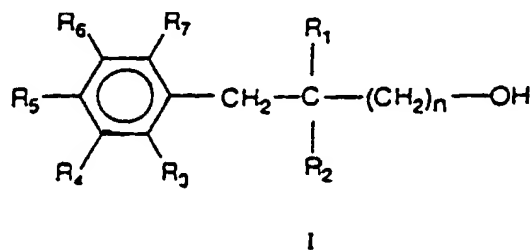
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## APPENDIX

8. Composition according to claim 14 which contains

- (a) 0.01 to 10% by wt. of a compound of formula I, and
- (b) 0.1 to 90% by wt. of a compound selected from C<sub>1</sub>-C<sub>6</sub> alkyl alcohols, unsubstituted or substituted with a C<sub>6</sub>-C<sub>12</sub> aryl, aralkyl or aryloxy group, anionic cationic, amphoteric or nonionic surfactants, dimethylformamide, betaines and glycerine.

13. A compound according to formula I,

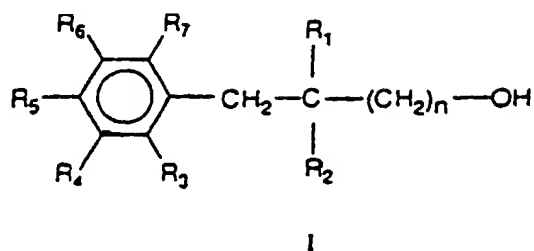


wherein R<sub>1</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>7</sub> are hydrogen; R<sub>2</sub> is an ethyl group; R<sub>4</sub> is chlorine; and n is 1 or 2.

14. A disinfectant, antiseptic, antimycotic, deodorant or preservative comprising:

a compound selected from alcohols, surfactants and solvents; and  
at least one compound according to formula I:





wherein,

$R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;

$R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2,

with the proviso, that

i) when  $R_1$  and all groups  $R_3$  through  $R_7$  are hydrogen, then

$$n = 2;$$

ii) when  $R_1$  and  $R_2$  are  $C_1$ - $C_6$  alkyl and

a) all groups  $R_3$  to  $R_7$  are hydrogen, or

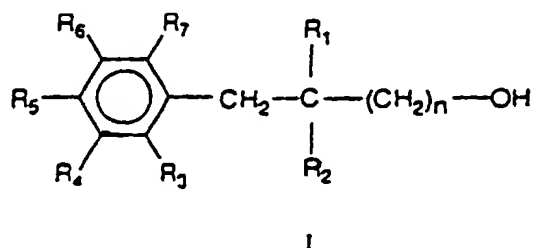
b)  $R_5$  is methyl, methoxy or chloride, and all other groups  $R_3$ ,

$R_4$ ,  $R_6$  and  $R_7$  are hydrogen,

then  $n = 2$ ;

- iii) when  $R_1$ ,  $R_2$  and  $R_4$  are methyl and all groups  $R_3$  and  $R_5$  through  $R_7$  are hydrogen, then  $n = 2$ ;
  - iv) when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ ;
  - v) when  $R_1$ ,  $R_3$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_2$  is methyl, and  $R_4$  and/or  $R_5$  are hydrogen or  $C_1$ - $C_6$  alkyl, then  $n = 2$ ;
  - vi) when  $R_1$  and  $R_4$  through  $R_7$  are hydrogen,  $R_2$  is methyl or ethyl, and  $R_3$  is methyl or methoxy, then  $n = 2$ ;
  - vii) when  $R_1$ ,  $R_3$ ,  $R_5$  and  $R_7$  are hydrogen,  $R_2$  is methyl,  $R_4$  and  $R_6$  are methyl or  $R_4$  is hydrogen and  $R_6$  is methyl, then  $n = 2$ ; and
  - viii) when  $R_1$  is hydrogen,  $R_2$  is butyl,  $R_3$  and  $R_5$  are chloride, and all other groups  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen, then  $n = 2$ .
16. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.01 to about 10% by weight.
17. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.05 to about 8% by weight.
18. A composition according to claim 14, wherein said compound according to formula I is present in an amount of about 0.1 to about 5% by weight.

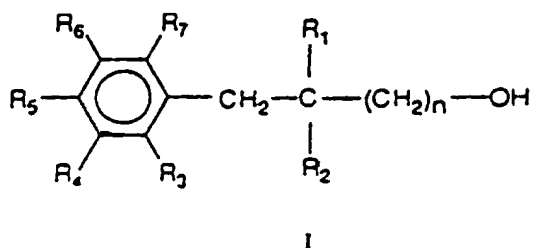
21. A shampoo or shower gel containing a preservative comprising:
- a compound selected from alcohols, surfactants and solvents;
  - a re-fatting agent; and
  - a compound according to formula I:



wherein,

- $R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;
- $R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and
- each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .
22. A method of disinfecting a surface comprising the step of applying a disinfectant to said surface, said disinfectant comprising:

a compound selected from alcohols, surfactants and solvents; and  
a compound according to formula I:

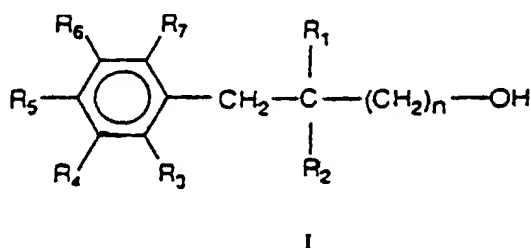


wherein,

- $R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;
- $R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and
- each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .

23. A method according to claim 22, wherein said surface is skin, a mucous membrane, or a surgical glove.

24. A method of deodorizing a surface comprising the step of applying a disinfectant to said surface, said deodorant comprising:  
a compound selected from alcohols, surfactants and solvents; and  
a compound according to formula I:

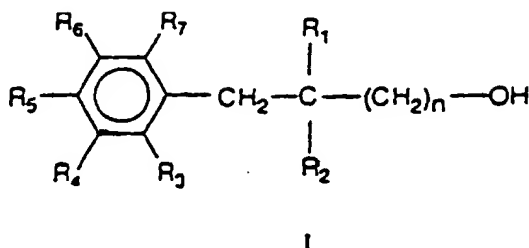


wherein,

- $R_1$  is hydrogen or is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl;
- $R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and
- each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2, with the proviso that when  $R_1$  and all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl, isopropyl, tert-butyl, or methoxy, then  $n = 2$ .

25. A method according to claim 24, wherein said surface is skin.

26. Process for the production of a compound of formula I:



wherein,

$R_1$  is hydrogen;

$R_2$  is selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl; and

each of  $R_3$  to  $R_7$  independently, is hydrogen, halogen, nitrile or thiocyanate, or selected from  $C_1$ - $C_8$  alkyl, uninterrupted or interrupted by oxygen and/or sulphur atoms,  $C_2$ - $C_8$  alkenyl and  $C_3$ - $C_8$  alkynyl, optionally attached to the aromatic ring by -S- or -O-, and  $n$  is 1 or 2;

with the proviso, that

i) when all groups  $R_3$  through  $R_7$  are hydrogen, then

$n = 2$ ;

ii) when all groups  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen and  $R_5$  is methyl,

isopropyl, tert-butyl, or methoxy, then  $n = 2$ ;

iii) when  $R_3$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_2$  is methyl, and  $R_4$  and/or  $R_5$  are

hydrogen or  $C_1$ - $C_6$  alkyl, then  $n = 2$ ;

iv) when  $R_4$  through  $R_7$  are hydrogen,  $R_2$  is methyl or ethyl, and  $R_3$  is

methyl or methoxy, then  $n = 2$ ;

v) when  $R_3$ ,  $R_5$  and  $R_7$  are hydrogen,  $R_2$  is methyl,  $R_4$  and  $R_6$  are methyl or  $R_4$  is hydrogen and  $R_6$  is methyl, then  $n = 2$ ; and

vi) when  $R_2$  is butyl,  $R_3$  and  $R_5$  are chloride, and all other groups

$R_4$ ,  $R_6$  and  $R_7$  are hydrogen, then  $n = 2$ ;

said process comprising the steps of:

- a) monoalkylating a malonic acid dialkyl ester to introduce the group  $R_2$ ;
- b) dialkylating the monoalkylated malonic acid alkyl ester with a benzyl halide optionally substituted at the aromatic ring to introduce the groups  $R_3$  through  $R_7$  which are other than hydrogen;
- c) saponifying and decarboxylating the dialkylated malonic acid dialkyl ester to form a corresponding 3-aryl-substituted propionic acid, and
- d) reducing the 3-aryl-substituted propionic acid to form a desired alcohol of formula I.

33. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_3$  and  $R_5$  to  $R_7$  are hydrogen,  $R_4$  is chlorine,  $R_1$  is hydrogen,  $R_2$  is ethyl and  $n$  is 1.

34. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_4$  to  $R_7$  are hydrogen,  $R_3$  is chlorine,  $R_1$  is hydrogen,  $R_2$  is ethyl and  $n$  is 1.

35. A disinfectant, antiseptic, antimycotic, deodorant or preservative according to claim 14, wherein  $R_3$ ,  $R_4$ ,  $R_6$  and  $R_7$  are hydrogen,  $R_5$  is chlorine,  $R_1$  is hydrogen,  $R_2$  is ethyl and  $n$  is 1.